

WHAT IS CLAIMED IS:

1. A method for scanning a specimen, located on a specimen stage defining an X-Y plane, with a scanning device which possesses an optical system and defines a scan field that incompletely encompasses a region of the specimen that is to be examined, comprising the following steps:
 - scanning a portion of the specimen region to be examined with a first scan field,
 - displacing the specimen stage in the X-Y plane to scan, with further scan fields, further portions of the specimen region to be examined, in such a way that the entire specimen region to be examined ends up within the plurality of scan fields; and
 - linking the specimen data obtained from the plurality of scan fields.
2. The method as defined in Claim 1, wherein the specimen region to be examined is determined by manual adjustment of the specimen stage in the X-Y plane.
3. The method as defined in Claim 1, wherein in the specimen region to be examined, the user, by means of a joystick, displaces the specimen stage in the spatial directions defined thereby, the adjustment data ascertained by the joystick being transferred to a PC and to a control unit which correspondingly displaces the specimen stage in the X-Y plane.
4. The method as defined in Claim 1, wherein the specimen region to be examined is marked on a display by means of a marking line; and on the basis of the marking line, the scan fields are automatically distributed by the PC over the specimen region to be examined, so that the specimen region to be examined ends up within the plurality of specimen regions; and the specimen stage is automatically displaced in the X-Y plane.

5. The method as defined in Claim 4, wherein the PC automatically ascertains, on the basis of the automatically distributed scan fields, adjustment data that are transferred to the control unit, which correspondingly displaces the specimen stage.
6. The method as defined in Claim 1, wherein a Z direction is defined perpendicular to the X-Y plane; and the displacement of each scan field in the Z direction is achieved by a relative motion between the specimen stage and the optical system.
7. The method as defined in Claim 6, wherein the plurality of scan fields are distributed over the specimen region of interest in such a way that the scan fields border one another.
8. The method as defined in Claim 7, wherein the scan fields partially overlap and thereby define an overlap region.
9. The method as defined in Claim 1, wherein the size of the scan field is determined by the optical system of the scanning device.
10. The method as defined in Claim 1, wherein the scanning device is constituted by a scanning microscope.
11. An arrangement for scanning microscopic specimens, comprising
 - a scanning device;
 - a specimen stage defining an X-Y plane, with which the microscopic specimen is displaceable at least the X-Y plane;
 - a scanning module and an optical system that scan a light beam within a defined scan field across the specimen and detects the light proceeding

- from the specimen; wherein the scan field is defined in such a way that it incompletely encloses a specimen region of interest that is to be examined;
- means for moving the specimen stage so that the entire specimen region of interest can be covered by the plurality of scan fields; and
- a PC, wherein the PC assembles an overall image from the detected data of the plurality of scan fields of the specimen region to be examined.

12. The arrangement as defined in Claim 11, wherein the specimen stage is manually adjustable in the X-Y plane and the specimen region to be examined can thereby be determined.
13. The arrangement as defined in Claim 11, wherein a joystick is provided with which the user displaces the specimen stage in the X-Y plane in such a way and thus determines the specimen region to be examined, and the PC transfers to a control unit the adjustment data ascertained by the joystick.
14. The arrangement as defined in Claim 11, wherein a designation means is provided with which the specimen region to be examined can be defined on a display a marking line; and on the basis of the marking line, the scan fields are automatically distributed by the PC over the specimen region to be examined in such a way that by automatic displacement of the specimen stage in the X-Y plane, the specimen region to be examined ends up within the plurality of scan fields.
15. The arrangement as defined in Claim 14, wherein the PC, on the basis of the automatically distributed scan fields, ascertains adjustment data that can be transferred to the control unit, which correspondingly displaces the specimen stage.

Publ. No. 5312 US

H 5312 US
10.09.2001

16. The arrangement as defined in Claim 11, wherein a Z direction is defined perpendicular to the X-Y plane; and the displacement of each scan field in the Z direction is achieved by a relative motion between the specimen stage and the optical system.
17. The arrangement as defined in Claim 16, wherein the plurality of scan fields are distributed over the specimen region of interest in such a way that the scan fields border one another.
18. The arrangement as defined in Claim 17, wherein the scan fields partially overlap and thereby define an overlap region.
19. The arrangement as defined in Claim 11, wherein the size of the scan field is determined by an optical system of the scanning device.
20. The arrangement as defined in Claim 11, wherein the scanning device is a scanning microscope.